

CLAIMS

1. A process for preparing an over molded motor stator structure comprising:
 - constructing a bobbin assembly around which a coil is wound;
 - constructing an intermediate stator assembly including
 - 5 assembling said bobbin assembly to a stator core comprising a plurality of stator laminations having an internal diameter and an external diameter;
 - disposing said intermediate stator assembly into a mold fixture comprising a cover half and an ejector half that includes an internal cavity for receiving the intermediate stator assembly, an inner ejector core, and a
 - 10 moveable plate;
 - loading a bearing carrier into said mold fixture;
 - closing said cover half over said ejector half of said mold thereby causing said moveable plate to travel within said mold;
 - injecting a unitizing material into said mold fixture to
 - 15 encapsulate said intermediate stator assembly and form an over molded motor stator structure including a unitized stator assembly having a central bore and a molded main body;
 - said moveable plate traveling within said mold fixture so as to allow said unitizing material to only fill selected areas and achieve an over
 - 20 molded motor stator structure wherein the internal diameter and the external diameter of said stator laminations is exposed.
2. The process of claim 1, wherein said moveable plate is spring loaded.
3. The process of claim 1, wherein said mold fixture includes means for forming sensor cavities.

4. The process of claim 1, wherein said mold fixture includes means for forming integral motor mounting features.
5. The process of claim 1, wherein said cover half comprises an inner cover insert and an outer cover portion.
6. The process of claim 5, wherein said inner cover insert and said outer cover portion comprise two discrete units.
7. The process of claim 6, wherein said inner cover insert is manually disposed over said ejector half of said mold.
8. The process of claim 5, wherein said inner cover insert and said outer cover portion comprise a single integral unit.
9. The process of claim 1, wherein said over molded stator structure is suitable for use as molded without requiring additional machining processes.
10. The process of claim 1, wherein said molded main body includes a bearing pocket support.

11. A process for preparing an over molded motor comprising:

5 constructing a rotor assembly on a rotor shaft, said rotor assembly being adapted for support by bearings located near end portions of said rotor shaft;

10 rotatably disposing said rotor assembly into an over molded motor stator structure in accordance with the process of Claim 1 by inserting said rotor assembly into said central bore of said over molded motor stator structure.

12. The process of claim 11, wherein said moveable plate is spring loaded.

13. The process of claim 11, wherein said mold fixture includes means for forming sensor cavities.

14. The process of claim 11, wherein said mold fixture includes means for forming integral motor mounting features.

15. The process of claim 11, wherein said cover half comprises an inner cover insert and an outer cover portion.

16. The process of claim 15, wherein said inner cover insert and said outer cover portion comprise two discrete units.

17. The process of claim 16, wherein said inner cover insert is manually disposed over said ejector half of said mold.

18. The process of claim 15, wherein said inner cover insert and said outer cover portion comprise a single integral unit.

19. The process of claim 11, wherein said over molded stator structure is suitable for use as molded without requiring additional machining processes.

20. The process of claim 11, wherein said molded main body includes a bearing pocket support.